Curriculum Vitae

Andrew Hamilton

Personal Details

Email:	ahamil@fnal.gov
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Date of birth:	February 27, 1977
Citizenship:	Canadian

Education

10/1996–04/2000 B.Sc. Hons. in Applied Physics, York University

Thesis: "Efficiencies of the York University Drift Chamber". A study of a the efficiencies and operation of a 4 layer drift chamber.
Other Research: Assisted in construction of the Straw Tube Tracker for the Zeus experiment at HERA and developed an in-situ wire tension measurement technique.
Supervisor: Dr. S. Bhadra

01/2001–09/2002 M.Sc in Experimental Astroparticle Physics, University of Alberta

Thesis: "ALTA: Alberta Large Area Time Coincidence Array". ALTA is a large area cosmic ray ground array which I developed calibration and analysis techniques for both the scintillator detectors and the GPS timing systems
Supervisor: Dr. W.J. MacDonald

09/2002–present Ph.D. Candidate in Experimental HEP, University of Alberta

Thesis: "Diffractive Di-photon Cross-Section at $\sqrt{s} = 1.96$ TeV". This measurement is important because it is expected to be a 'standard candle' for the predictions of central exclusive Higgs production at the LHC. Expected completion and publication in 12/2005.
Other Research: I am also the coordinator of a group of 6 students and technicians constructing a prototype of the LUCID luminosity monitor proposed for ATLAS.
Supervisor: Dr. J. Pinfold

Research Interests

My current research focus is central exclusive diffractive processes at hadron colliders, in hopes of motivating a search for central exclusive Higgs production at the LHC. I believe this innovative channel can provide information about the Higgs Boson not possible by any other channel at the LHC, and it is currently not getting the attention it deserves. While this is my current interest, I am open to exploring other innovative physics at the LHC.

Publications

- CDF Author as of 08/2004
- A. Hamilton, *Estimating Effective Luminosity for Rapidity Gap Physics* CDFNOTE 7556, (2005)
- A. Hamilton, *Upper Limit on Exclusive Double Pomeron Exchange Diphoton Cross Section* CDFNOTE 7368, (2004)
- W.Brouwer et.al., *The ALTA Electronics Systems* Nucl. Inst. & Meth. **A 539** (2005) 595-605
- W.Brouwer et.al., *The ALTA GPS Based Timing Systems* Nucl. Inst. & Meth. **A 493** (2002) 79-89

Presentations

- Forward Physics at the LHC 2004: *Exclusive Diphoton Production at CDF* (14/12/2004)
- Small-X & Diffraction 2003: *Exclusive Double Pomeron Exchange at CDF* (18/09/2003)
- Western Regional Nuclear & Particle Physics 2002: *ALTA: Large Area Cosmic Ray Array* (16/02/2002)
- SALTA Workshop at Snowmass 2001: *The ALTA GPS Based Timing Systems* (07/04/2001)

Teaching

01/2001–04/2002 Teaching Assistant at University of Alberta
Supervisor: Michelle McCurdy
Overview: Supervised undergraduate laboratories and graded the reports.

05/2001 Recieved GSA award for teaching excellence.

05/2001 & 05/2002 Outreach Program at University of Alberta
Supervisor: Michelle McCurdy
Overview: Participated as a lab demonstrator and mentor for high school students in an outreach program designed to attract high school students to the physical sciences.

Administration

09/2003–09/2004	Member of Graduate Students Association of Fermilab *Overview:* Elected by the graduate student body at Fermilab, the Fermilab GSA represents the approximately 700 graduate students. Along with organizing social, sporting, and educational events for graduate students, I worked with the Fermilab User's Executive Committee to procure $11,000 from the University Research Association to purchase 35 bicycles for graduate student transportation at Fermilab.
06/2003	Organized New Perspectives Conference 2004 *Overview:* The New Perspectives 2004 Conference was for graduate students and young post-docs to show their work. The 2 day conference was held at Fermilab, invited speakers included Nobel laureate Leon Lederman and spokesperson of the $g-2$ experiment David Hertzog.

Academic Awards and Scholarships

- 2002 Alberta Heritage Scholarship ($2,000)
- 1999 J.W. Megaw Prize in Experimental Phsyics (no monetary value)
- 1996 York University Admission Scholarship ($5,000)

Other Relevant Activities

- Responsible for the calibration of the CDF Miniplug calorimeter (09/2004 - present)
- Assist with the hardware maintenance of the CDF Beam Shower Counters and Roman Pot Detectors (09/2004 - present)
- Attended CTEQ Summer School on QCD Analysis and Phenomenology (05/2005)
- Responsible for monitoring of the CDF offline database (01/2003 - 12/2003)
- Attended "Physics of Forward Proton Taggers at the LHC" confernce in Manchester (12/2003)
- Completed 'ACE' shift at CDF (09/2003 - 12/2003)
- Attended Summer School at Erice, Italy (09/2003)
- Completed Accelerated C++ Course at Fermilab (07/2003)

References

These persons have extensive knowledge of my professional qualifications and character:

Dr. James Pinfold
Ph.D Thesis Supervisor
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University of Alberta
Edmonton, AB., T6G 2N5
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Dr. Mike Albrow
Mentor & Diffractive Physics Expert
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These persons are familiar with my professional qualifications and character:

Dr. Beate Heinemann
Mentor & CDF Expert
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